unmodified control blocks and then replacing a root node so as to atomically commit the changes.

REMARKS:

Claims 15 to 55 are in the application. The independent claims herein, namely claims 15, 23, 31, 39 and 47 to 55, have been amended. Reconsideration and further examination are respectfully requested.

Rejection under Section 112, First Paragraph

All pending claims were rejected under 25 U.S.C. § 112, first paragraph, for recitation of "maintaining said network objects in a cache memory in a network cache." The Office Action asserted that the application did not describe such a feature. Applicants strongly disagree with this assertion.

In more detail, the Office Action indicated that the recited feature corresponded to a figure drawn by the Examiner and included at page 4 of the Office Action. Applicants completely agree with this indication -- the figure drawn at page 4 of the Office Action does correspond to one possible implementation of "maintaining said network objects in a cache memory in a network cache." However, Applicants are puzzled by the Office Action's subsequent assertion that such a feature is not disclosed by the application. In fact, through use

of dashed lines to indicate included components, Figure 1 of the application includes the very features shown by the Examiner's figure.

Figure 1 of the application shows a network cache (labeled "cache engine 100") that includes memory 103 and mass storage 104, which in turn includes network object 114. This interpretation of Figure 1 is supported by the discussion thereof at pages 7 and 8 of the application. The arrangement shown by Figure 1 exactly corresponds to the Examiner's figure and to the claim language, except that the term "network cache" is used instead of the term "cache engine."

Applicants believe that one skilled in the art would understand that cache engine 100 connected as shown in Figure 1 via network 110 to client and server devices is a "network cache." However, in order to remove any possible basis for the rejection under section 112, first paragraph, Applicants have amended to the claims to recite "a cache engine, said cache engine connected via a network to the server and the client" instead of "a network cache."

In view of the foregoing, reconsideration and withdrawal are respectfully request of the rejection under section 112, first paragraph.

Rejection under Section 112, Second Paragraph

All pending claims were rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. Applicants respectfully traverse this rejection.

In the rejection, the Office Action asked the following question: "Since the network object [is] in the cache memory and the cache memory [is] in the network cache, how is

the time required for retrieving object[s] from said cache memory able to be minimized?" Applicants are completely surprised to see this question in the Office Action, at least because the answer to this question is one of the most important improvements over the art provided by the disclosed invention.

In answer to the question posed in the Office Action, the invention minimizes the time required for retrieving object from the cache memory through various techniques involving how the objects are stored in the cache memory. Several examples of such techniques are recited by the rejected claims themselves. For example, independent claim 23 recites an embodiment that optimizes "(a) spatial locality of storage of network objects within said mass storage, and (b) temporal locality of retrieval of said network objects from said mass storage." Likewise, independent claim 31 recites a embodiment that determines "when and where on said mass storage to record said network objects so as to improve efficiency of maintaining or serving said network objects." Of course, because claims 15, 23 and 31 are independent claims, claim 15 is not limited to the examples provided by the embodiments recited by claims 23 and 31.

Applicants also are confused by the Office Action's statement that "[t]he remaining independent claims are rejected for similar reasons to claim 15." At least some of the remaining independent claims recite features of the invention entirely different from claim 15's "minimiz[ing] a time required for said network cache to retrieve a network object from said cache memory."

As set forth above, claims 23 and 31 recite specific steps that optimize storage or improve efficiency. Claim 47 recites that network object are maintained "independently of a file

system for [the cache's] mass storage." Claims 48 to 51 recite operations on a "group of network objects." Claim 52 recites use of "non-hierarchical storage." Claim 53 concerns using storage that need not be persistent. Claims 54 and 55 concerns atomically committed changes. Each of these independent claims therefore recites different embodiments of the invention.

The features recited by each of the independent claims are discussed in detail in the application. Nothing whatsoever is seen to be indefinite about these features. It is axiomatic that the definiteness of independent claims is not determined based on features recited by other independent claims. Therefore, rejection of all of these claims for alleged indefiniteness based on the features recited by claim 15 is improper.

For at least the foregoing reasons, reconsideration and withdrawal are respectfully requested of the rejection under section 112, second paragraph.

Entry of Amendment

Applicants respectfully point out that the changes in claim language set forth in this response in no way affect the scope of the claims. Rather, the changes in claim language only involve using terminology set forth in the application to recite features identical to those recited by the claims as previously considered. Accordingly, Applicants submit that this amendment cannot be construed as necessitating further consideration and/or search. Entry of this amendment is therefore believed to be proper.

Information Disclosure Statement File June 20, 2000

The Office Action indicated that the Information Disclosure Statement filed June 20, 2000, failed to comply with 37 C.F.R. 1.98(a)(1). Applicants understand the Office Action to indicate that the Information Disclosure Statement did not include a list of all patents, publications, or other information submitted for consideration by the Office. However, Applicants filed two Forms PTO-1449 with the Information Disclosure Statement that listed all patents, publications and other information submitted for consideration for the Office.

Copies of the Forms PTO-1449 are attached to this paper for the Examiner's consideration. Also attached is a copy of a postcard receipt that verifies that Applicants filed these Forms PTO-1449 with the June 20th Information Disclosure Statement. In this regard, Applicants respectfully direct the Examiner's attention to the following provision set forth at M.P.E.P § 504:

> A postcard receipt which itemizes and properly identifies the items which are being filed serves as *prima facie* evidence of receipt in the PTO of all items listed thereon on the date stamped thereon by the PTO.

At least because the Information Disclosure Statement was filed with these Forms PTO-1449 before the final rejection in this case, along with the fee specified at 37 C.F.R. 1.17(p), consideration of the Information Disclosure Statement is believed to be proper. See 37 C.F.R. 1.97(c).

In view of the foregoing, Applicants respectfully request that the Examiner returned initialed copies of the Forms PTO-1449 with the next paper from the Office so as to indicate that the documents cited thereon have been considered and made formally of record.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at (614) 486-3585. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,

Dane C. Butzer

Dated: December 4, 2000

Dane C. Butzer
Reg. No. 43,521

The Swernofsky Law Group
P.O. Box 390013
Mountain View, CA 94039-0013
(650) 947-0700